

EPA Region 5 Records Ctr



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# Health Consultation

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WASTE HAULING

DECATUR, MACON COUNTY, ILLINOIS

CERCLIS NO ILD000671073

AUGUST 2, 1999

U S DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

## **Health Consultation   A Note of Explanation**

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site a chemical release or the presence of hazardous material. In order to prevent or mitigate exposures a consultation may lead to specific actions such as restricting use of or replacing water supplies intensifying environmental sampling restricting site access or removing the contaminated material.

In addition consultations may recommend additional public health actions such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes, conducting biological indicators of exposure studies to assess exposure and providing health education for health care providers and community members. This concludes the health consultation process for this site unless additional information is obtained by ATSDR which in the Agency's opinion indicates a need to revise or append the conclusions previously issued.

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# **HEALTH CONSULTATION**

## **WASTE HAULING**

**DECATUR, MACON COUNTY, ILLINOIS**

**CERCLIS NO ILD000671073**

**Prepared by**

**Illinois Department of Public Health  
Under Cooperative Agreement with the  
Agency for Toxic Substances and Disease Registry**

## **BACKGROUND AND STATEMENT OF ISSUES**

The Illinois Environmental Protection Agency (Illinois EPA) requested that the Illinois Department of Public Health (IDPH) review the historical and environmental data available to determine if a public health hazard exists at the Waste Hauling Inc , site [1] Hazardous chemicals have been identified in groundwater, surface water, and soil The site is on the Comprehensive Environmental Response and Liability Act Inventory System (CERCLIS) list

The Waste Hauling site is an inactive landfill located on West Rock Spring Road, Rural Route Number 8, southwest of Decatur Illinois, in Macon County (Attachment 1) The site is in a rural and agricultural area on approximately 400 acres but only about 30 acres were used for landfilling It is surrounded by farmland and a wooded area to the east and west, wooded area and an oxbow of the Sangamon River to the north and five residences and West Rock Spring Road to the south

Currently, the Waste Hauling site consists of three inactive landfill areas, Areas 1 2 and 3, which were permitted for landfilling (Attachment 2) Landfill Area 1 is approximately 5.5 acres and is south of Landfill Area 2 Landfill Area 2 is approximately 8 acres These unlined areas are on the eastern part of the site along the oxbow of the Sangamon River In 1992, a 15-foot-wide and 5 to 7 foot deep, clay-lined trench was constructed around the perimeter of Areas 1 and 2 to act as a leachate collection system This leachate is a liquid that has percolated through or drained from the waste stored in the landfill areas [2]

Landfill Area 3 is approximately 14 acres The clay lined area is west of the access road across from Areas 1 and 2 An intermittent stream flows in between Areas 1 and 3 to the Sangamon River about 0.25 miles north of Area 2 The intermittent stream is about 200 yards long An excavation pond approximately 75 feet by 40 feet is between the site access road and Area 1 [2] Surface water runoff and groundwater is suspected to generally flow north to northwest toward the Sangamon River The topography of the surrounding area is relatively flat with the exception of the elevation created by the three areas

In 1972, Mr Paul McKinney purchased property to construct and operate McKinney s Landfill (Areas 1 and 2) He ceased dumping waste in these areas in 1979 In 1980, he closed Areas 1 and 2 by covering them with 6 inches of soil and opened Area 3 This landfill area was underlain with an engineered clay liner Area 3 was constructed to accept special wastes such as sludges, lubricants, oils polyvinyl chloride (PVC), rubber wastes, tires and pathological hospital wastes such as tubing and specimen containers Oil sludge was received from Firestone, waste sludge from Caterpillar Tractor Company, wastewater sludges were received from Quaker Oats and grinding sludge was received from York [2]

In 1980 Mr Jerry Canfield purchased 80 acres, including the landfill areas He subsequently purchased surrounding property totaling 320 acres and started the Waste Hauling, Inc Company

in 1990 Mr Canfield operated Waste Hauling until a hazardous waste spill occurred in 1992 The site has not accepted waste since then [2]

Since 1987, more than 16 site inspections have been conducted at the site Numerous violations were cited, including inadequate day-to-day cover of waste leachate seeps erosion gullies, no groundwater monitoring systems, no gas vents, no closure plan, and waste deposited into an unpermitted portion of Landfill Area 3 Area 3 was approximately 50 feet over height and accepted hazardous waste

In June 1987, one on-site sediment sample, one off-site sediment sample one surface water sample, and one groundwater monitoring well sample were collected and analyzed during an Illinois EPA site inspection An additional Illinois EPA site inspection in April 1992 included collection of and analysis of on-site and off-site leachate samples Later that month, Illinois EPA responded to a criminal warrant concerning 53 drums of hazardous paint waste that had been shipped from Bell Sports in Rantoul, Illinois This material was found, excavated and subsequently removed from the site Ecology and Environment, Incorporated conducted a Focused Site Inspection Prioritization (FSIP) in August 1995 Two sediment samples and one surface water sample were collected during the FSIP

IDPH staff visited the site with Illinois EPA personnel on March 16, 1998 Vehicles were restricted from entering the site by a locked entrance gate that crossed the access road south of the landfill areas The remaining landfill areas are neither fenced nor secured The entire area was very wet which made the access road impassable beyond the southern base of Landfill Area 3 Erosion gullies were observed around the perimeter of Landfill Area 3 Some of the erosion gullies on the southeastern side of Landfill Area 3 drain eastward, over the access road, and into the excavated pond Leachate seeps and running leachate could be seen in the erosion gullies A pungent odor was off-gasing from the leachate areas Red-stained soil surrounded the excavated pond A wetland area was southeast of the excavated pond and adjacent to Landfill Areas 1 and 2 The intermittent stream originated south of Landfill Area 1 near a residence and flowed northward to the river Wetland areas, junked vehicles and a groundwater monitoring well were observed at the northern border of Landfill Area 3

An Illinois EPA CERCLA Site Team Evaluation Prioritization (STEP) investigation was conducted on March 24 and 25 1998 to determine whether the landfill is adversely affecting groundwater and the surrounding environment The investigation included collection of soil samples (X102 through X106) and sediment samples (X201 through X203) from a depth of 0 to 4 inches from the surface A shallow off-site soil sample (X101) was collected from a residential property south of the landfill (Attachment 2) Groundwater samples were collected both on the site from about 20 feet in depth (G101 through G104) and off the site (G201, G202/G203)

About 1,000 residents live within a 4-mile radius of the site and obtain drinking water from private wells Most of the wells in the vicinity of the site are screened at depths between 50 and 70 feet in the sand and gravel aquifer that underlies the site The nearest private well is about 100

feet south of the site. The regional groundwater flow in the area appears to follow the topography of the site, which generally slopes northward toward the Sangamon River. The city of Decatur obtains drinking water from Lake Decatur, which is approximately 4 miles northeast and upstream from the site. In addition, Decatur supplements their water supply with two wells that are approximately 18 miles northeast of the site. The city of Harristown has an auxiliary well, located approximately 2 miles northwest of the site [2].

The Sangamon River is a state recognized fishery. No surface water (drinking water) intakes are within 15 miles downstream of the site. IDPH does not know what water systems are used for agricultural purposes. A state park is approximately 2 miles downstream of the site. Forest and wetlands are adjacent to the Sangamon River about 0.25 miles north of the site and continue along the river front downstream of the site.

## **DISCUSSION**

The maximum concentration of each contaminant detected during sampling was compared with appropriate screening comparison values, when available, to select contaminants for further evaluation for exposure and for both carcinogenic and non carcinogenic health endpoints. Chemicals that exceeded comparison values were selected for further evaluation and are shown in Tables 1, 2, and 3. A detailed discussion of each of the comparison values used is found in Attachment 3. Exceeding a comparison value does not mean adverse health effects will occur upon exposure. The amount of the contaminant, as well as the duration and route of exposure, and the health status and receptivity of exposed individuals are important factors in determining the potential for adverse health effects.

Analytical results of samples collected during the 1998 Illinois EPA STEP investigation showed the presence of soil, sediment, and groundwater contamination. On-site soil and sediment samples showed the presence of semivolatile organic compounds (SVOCs) and metal compounds. The on-site groundwater monitoring well results showed elevated levels of volatile organic compounds (VOCs), SVOCs, and metals. No elevated VOCs or SVOCs were detected in off-site wells, however, sodium concentrations were elevated.

Soil, sediment, and groundwater data suggest that contaminants have been released from the landfill. Concentrations of beryllium and arsenic were detected above comparison values in soil and sediment. Benzo(a)pyrene was detected above comparison values in the soil.

A completed exposure pathway consists of a source of contamination, environmental media and transport mechanisms, a point of exposure, and a receptor population. Exposure to a contaminant may have occurred in the past, may be occurring, or may occur in the future. A completed exposure pathway exists when all elements that link the contaminant source to an exposed population are known. When one of these elements is missing, a potential exposure pathway exists. Completed and potential exposure pathways are presented in Table 4.

## **Soil and Sediment**

As a worse-case scenario IDPH assumed that a child would frequently trespass onto the property and have skin contact with soil, inhale contaminated dusts, inhale vapors from soil volatilization, and incidentally ingest dust through hand to mouth activities. The site is not restricted to trespassing but the site is in a rural area where young children would not be expected to play. Trespassers (hunters) and employees at the landfill may have been exposed to contaminants in the same manner described for children's exposures. An estimated dose for children and adults based on those exposure scenarios, indicates that no adverse health effects would be expected from exposure to contaminated soil or sediments.

## **Groundwater**

The groundwater on the site is not being consumed, and the contaminants detected have not migrated away from the site to residential wells. Because of the proximity of the site to the Sangamon River, groundwater may discharge directly into the river rather than into residential drinking water wells. No known surface water intakes are within 15 miles downstream of the site. The dilution factor of the river would reduce levels of any contaminants that might migrate downstream.

On-site groundwater contains contaminants that exceeded comparison values (Table 2). If ingested for a long period, 1,2-dichloroethane, trichloroethene, tetrachloroethane, and bis(2-ethylhexyl)phthalate could pose a low increased risk of developing cancer. If ingested for a long period, vinyl chloride, lead, and manganese could lead to adverse health effects. Vinyl chloride is classified as a known human carcinogen, and consumption of levels found in monitoring well G103 could lead to an increased risk of developing cancer. Since no one consumes this water, no adverse health effects would be expected to occur. Future property use should be restricted to prevent future use of on-site groundwater.

Sodium was the only inorganic chemical detected in residential wells at levels that exceeded IDPH health guidelines. However, this is only a concern for people with a history of high blood pressure who consume the water.

## **CHILD HEALTH INITIATIVE**

IDPH recognizes that children are especially sensitive to some contaminants. For that reason, IDPH includes children when evaluating exposures to contaminants. Children trespassing on the site are the most sensitive population considered in this health assessment. Estimated exposure doses for children indicate that no adverse health effects are expected as a result of exposure to soil and sediment contamination.

## **CONCLUSIONS**

Based on the available information reviewed, IDPH concludes the site currently poses no apparent public health hazard. Future exposure can be avoided if the following recommendations are implemented.

## **RECOMMENDATIONS**

IDPH recommends that Illinois EPA

- ▶ ensure that the owner provides and maintains an adequate landfill cap,
- ▶ install an on-site groundwater monitoring well system, and
- ▶ conduct periodic monitoring of nearby private wells to ensure that no contaminated groundwater has migrated off the site at levels of public health concern.

## **PREPARER OF REPORT**

Cary Ware  
Environmental Toxicologist  
Illinois Department of Public Health


## **REFERENCES**

- 1 Sample Summary Letter from Illinois EPA. Brad Taylor, to IDPH. Mike Moomey. August 13, 1998.
- 2 Waste Hauling, Inc. Focused Site Inspection Prioritization Enclosures 1 and 2. Ecology and Environment, Inc. Chicago, Illinois, September 1995.

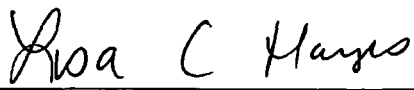


## CERTIFICATION

This Waste Hauling, Inc , Health Consultation was prepared by the Illinois Department of Public Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR) It is in accordance with approved methodology and procedures existing at the time the Health Consultation was initiated

  
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Gail Godfrey  
Technical Project Officer, SPS, SSAB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this Health Consultation and concurs with its findings

  
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for Richard Gillig  
Section Chief, SPS SSAB, DHAC, ATSDR

**TABLE 1 Chemicals of Interest in On-site Soil and Sediment (March 1998)**

Contaminant	Soil Max Conc (ppm)	Sediment Max Conc (ppm)	Soil Location	Sediment Location	Comparison Value (ppm)
Benzo(a)pyrene	0.42J	--	X105	--	0.1 CREG
Arsenic	9.8	6.7	X107	X201	0.5 CREG
Beryllium	0.5	0.5	X102	X201	0.2 CREG

J - estimated value

ppm - parts per million

Reference - 2

**TABLE 2 Chemicals of Interest in On-site Groundwater (March 1998)**

Contaminant	Max Conc (ppb)	Location	Comparison Value (ppb)
Vinyl Chloride	8.0J	G103	0.7 EMEG
1,2 Dichloroethane	2.0J	G103	0.4 CREG
Trichloroethene	4.0J	G103	3.0 CREG
Tetrachloroethene	15.0	G103	0.7 CREG
Bis(2-ethylhexyl)phthalate	120.0I	G103	3.0 CREG
Lead	39.8J	G104	15.0 (A)
Manganese	1080.0	G103	2000 RMEG

J - estimated value

A - action level

ppb - parts per billion

Reference - 2

**TABLE 3 Chemicals of Interest in Off-site Groundwater (March 1998)**

Contaminant	Max Conc (ppb)	Location	Comparison Value (ppb)
Sodium	39,400	G201	20,000 (IDPH)

ppb - parts per billion

Reference - 2

**TABLE 4 Completed and Potential Exposure Pathways****A Completed Exposure Pathway**

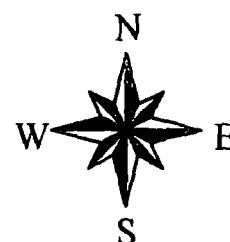
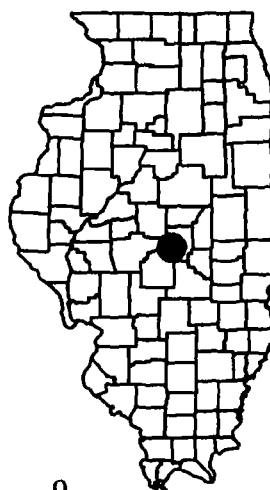
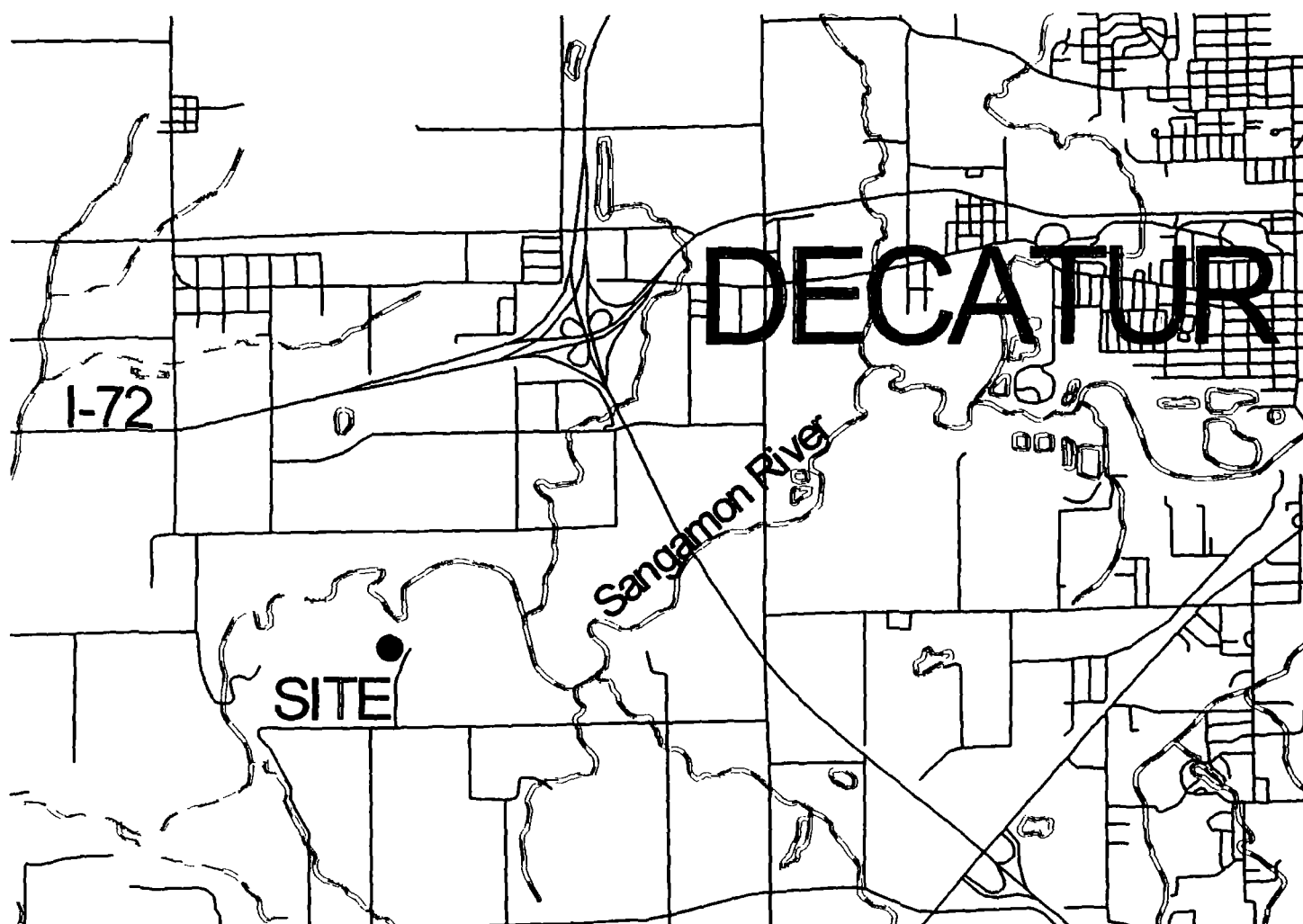
Pathway Name	Source	Medium	Exposure Point	Exposure Route	Receptor Population	Time of Exposure	Exposure Activities	Estimated # Exposed	Chemicals
On site surface soil and sediment	Waste Hauling Inc	Contaminated surface soil and sediment	On site soil and sediment	Dermal Inhalation Ingestion	Employees Trespassers	Past present future	Contacting contaminated soil and sediment	10	Table 1

**B Potential Exposure Pathway**

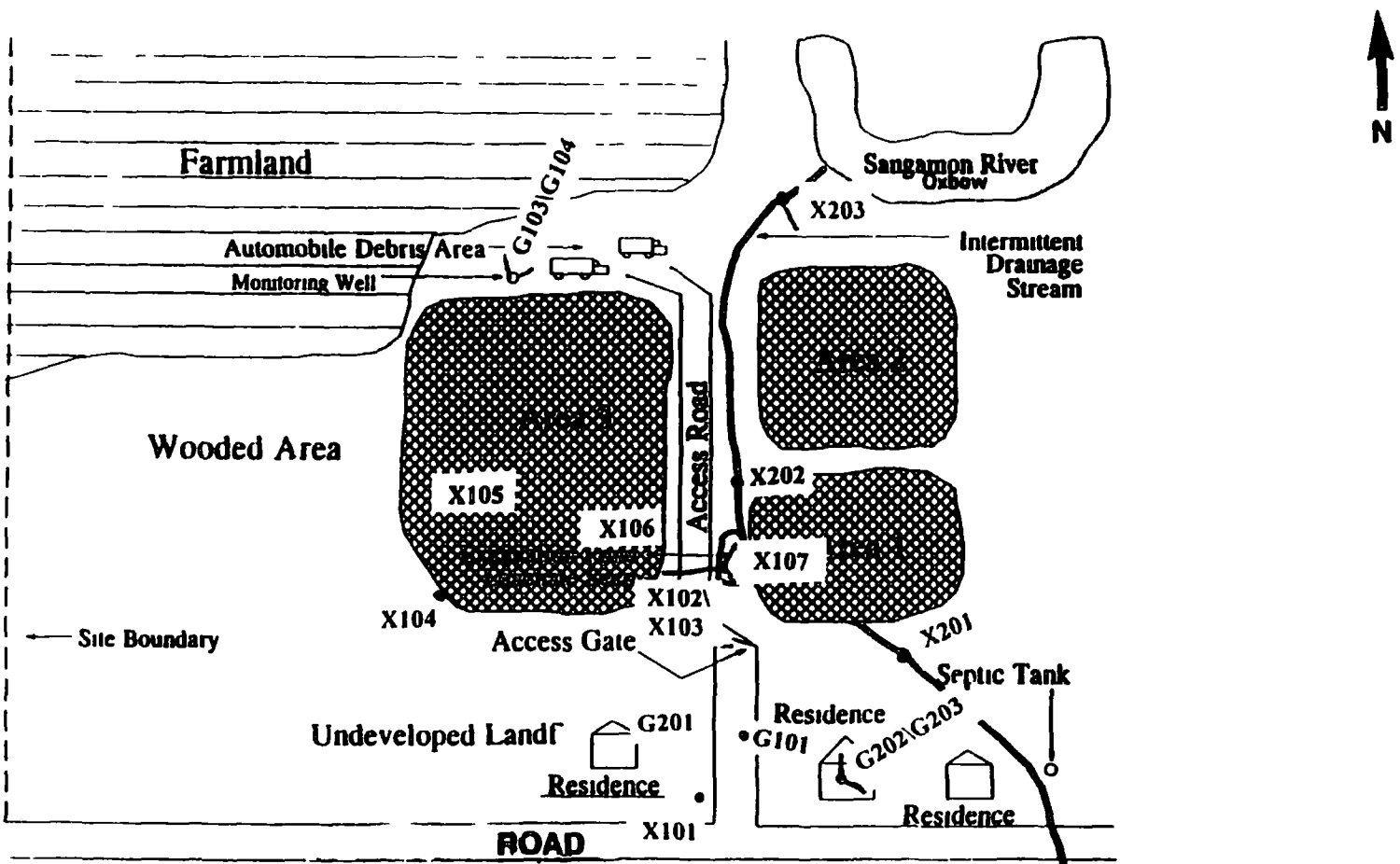
Residential wells	Contaminated on site shallow groundwater aquifer	Contaminated deep groundwater aquifers*	Taps in residences using private wells	Dermal Inhalation Ingestion	Residents using private wells	Future	Drinking showering washing cooking	20	Table 2
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\*The missing component that makes the pathway potential rather than completed

# Location of Waste Hauling, Inc.



Source IDPH GIS



### **Comparison Values Used in Screening Contaminants for Further Evaluation**

Environmental Media Evaluation Guides (EMEGs) are developed for chemicals based on their toxicity, frequency of occurrence at National Priority List (NPL) sites, and potential for human exposure. They are derived to protect the most sensitive populations and are not action levels but rather comparison values. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure, and are very conservative concentration values designed to protect sensitive members of the population.

Reference Dose Media Evaluation Guides (RMEGs) are another type of comparison value derived to protect the most sensitive populations. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure, and are very conservative concentration values designed to protect sensitive members of the population.

Cancer Risk Evaluation Guides (CREGs) are estimated contaminant concentrations based on a probability of one excess cancer in a million persons exposed to a chemical over a lifetime. These are also very conservative values designed to protect sensitive members of the population.

Maximum Contaminant Levels (MCLs) have been established by USEPA for public water supplies to reduce the chances of adverse health effects from contaminated drinking water. These standards are well below levels for which health effects have been observed and take into account the financial feasibility of achieving specific contaminant levels. These are enforceable limits that public water supplies must meet.

Lifetime Health Advisories for drinking water (LTHAs) have been established by USEPA for drinking water and are the concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects over a lifetime of exposure. These are conservative values that incorporate a margin of safety.